

ABB

ABB

Archives of Biochemistry and Biophysics

ABB

Volume 381, 2000

ABB

ABB



ACADEMIC PRESS

A Harcourt Science and Technology Company

Copyright © 2000 by Academic Press

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the Publisher. *Exceptions:* Explicit permission from Academic Press is not required to reproduce a maximum of two figures or tables from an Academic Press article in another scientific or research publication provided that the material has not been credited to another source and that full credit to the Academic Press article is given. In addition, authors of work contained herein need not obtain permission in the following cases only: (1) to use their original figures or tables in their future works; (2) to make copies of their papers for use in their classroom teaching; and (3) to include their papers as part of their dissertations.

The appearance of the code at the bottom of the first page of an article in this journal indicates the Publisher's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (222 Rosewood Drive, Danvers, Massachusetts 01923), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-2000 articles are the same as those for current articles.

0003-9861/00 \$35.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.





# CONTENTS OF VOLUME 381

Number 1, September 1, 2000

## RESEARCH REPORT

- Phosphate-Substituted ATP Analogs Are Antagonists at Human P2Y<sub>1</sub> Purinoceptors *Katrin Sak, Gerda Raidaru, Tania E. Webb, and Jaak Järvi* 171

## BIOLOGICAL OXIDATIONS: FREE RADICALS, NITRIC OXIDE, ANTIOXIDANTS, AND P450 REACTIONS

- A New Method for the Analysis of Urinary Vitamin E Metabolites and the Tentative Identification of a Novel Group of Compounds *S. A. S. Pope, P. T. Clayton, and D. P. R. Muller* 8
- Mn<sup>II</sup> Is Not a Productive Substrate for Wild-Type or Recombinant Lignin Peroxidase Isozyme H2 *Maarten D. Sollewijn Gelpke, Dawei Sheng, and Michael H. Gold* 16
- Coexpression of Genetically Engineered Fused Enzyme between Yeast NADPH-P450 Reductase and Human Cytochrome P450 3A4 and Human Cytochrome b<sub>5</sub> in Yeast *Koji Hayashi, Toshiyuki Sakaki, Shiro Kominami, Kuniyo Inouye, and Yoshiyasu Yabusaki* 164

## BIOPHYSICAL CHEMISTRY AND X-RAY CRYSTALLOGRAPHY

- Chemical Modification of Pyrimidine TFOs: Effect on i-Motif and Triple Helix Formation *Laurent Lacroix and Jean-Louis Mergny* 153

## DNA REPLICATION, RECOMBINATION, AND REPAIR; TRANSCRIPTION; MECHANISMS OF ONCOGENIC TRANSFORMATION

- Regulation of 25-Hydroxyvitamin D<sub>3</sub> 1 $\alpha$ -Hydroxylase Gene Expression by Parathyroid Hormone and 1,25-Dihydroxyvitamin D<sub>3</sub> *Holly L. Brenza and Hector F. DeLuca* 143

## ENZYME STRUCTURE AND MECHANISMS; CELLULAR REGULATION; PHOSPHORYLATION AND DEPHOSPHORYLATION

- Starvation Increases the Amount of Pyruvate Dehydrogenase Kinase in Several Mammalian Tissues *Pengfei Wu, Paul V. Blair, Juichi Sato, Jerzy Jaskiewicz, Kirill M. Popov, and Robert A. Harris* 1
- Decavanadate Inhibits Catalysis by Ribonuclease A *June M. Messmore and Ronald T. Raines* 25
- Photoaffinity Labeling and Site-Directed Mutagenesis of Rat Squalene Epoxidase *Hee-Kyoung Lee, Pamela Denner-Ancona, Jun Sakakibara, Teruo Ono, and Glenn D. Prestwich* 43
- Metabolism of  $\alpha$ -D-[1,2-<sup>13</sup>C]Glucose Pentaacetate and  $\alpha$ -D-Glucose Penta[2-<sup>13</sup>C]acetate in Rat Hepatocytes *Willy J. Malaisse, Laurence Ladrière, Marcel M. Kadiata, Ingrid Verbruggen, and Rudolph Willem* 61
- Rapid Effects of Stretched Myocardial and Vascular Cells on Gene Expression of Neonatal Rat Cardiomyocytes with Emphasis on Autocrine and Paracrine Mechanisms *Annemieke J. van Wamel, Cindy Ruwhof, Lizet J. van der Valk-Kokshoorn, Peter I. Schrier, and Arnoud van der Laarse* 67
- Mechanism of Activation of cAMP-Dependent Protein Kinase: In *Mucor rouxii* the Apparent Specific Activity of the cAMP-Activated Holoenzyme Is Different than That of Its Free Catalytic Subunit *Vanina Zaremborg, Arianna Donella-Deana, and Silvia Moreno* 74
- Metabolic Changes in the Poly(ADP-Ribosyl)ation Pathway of Differentiating Rat Germinal Cells *Luigia Atorino, Rafael Alvarez-Gonzalez, Anna Cardone, Iliana Lepore, Benedetta Farina, and Piera Quesada* 111



- Intact Human Ceruloplasmin Is Required for the Incorporation of Iron into Human Ferritin  
*Marc E. Van Eden and Steven D. Aust* 119
- Ethanol Has Multiple Effects on DNA Synthesis in Fibroblasts Depending on the Presence of Secreted Growth Regulators and Zinc as well as the Level of Protein Kinase C Activation  
*Karan S. Crilly and Zoltan Kiss* 127

### LIPIDS, LIPID MEDIATORS, AND GLYCOLIPIDS

- Mouse Group X Secretory Phospholipase A<sub>2</sub> Induces a Potent Release of Arachidonic Acid from Spleen Cells and Acts as a Ligand for the Phospholipase A<sub>2</sub> Receptor  
*Yasuhide Morioka, Akihiko Saiga, Yasunori Yokota, Noriko Suzuki, Minoru Ikeda, Takashi Ono, Kazumi Nakano, Noriko Fujii, Jun Ishizaki, Hitoshi Arita, and Kohji Hanasaki* 31
- Acid Dissociation Constants of Bilirubin and Related Carboxylic Acid Compounds in Bile Salt Solutions  
*William E. Kurtin, Jason Enz, Celeste Dunsmoor, Neil Evans, and David A. Lightner* 83

### PROTEIN STRUCTURE AND FUNCTION; PROTEASES, PROTEIN TURNOVER, AND POST-TRANSLATIONAL PROCESSING

- Primary Structure Characterization of a *Rhodocyclus tenuis* Diheme Cytochrome *c* Reveals the Existence of Two Different Classes of Low-Potential Diheme Cytochromes *c* in Purple Phototropic Bacteria  
*Bart Devreese, Ann Brigé, Katrien Backers, Gonzalez Van Driessche, Terrance E. Meyer, Michael A. Cusanovich, and Jozef J. Van Beeumen* 53
- A Modified Method of Islet Isolation Preserves the Ability of Pancreatic Islets to Increase Protein O-Glycosylation in Response to Glucose and Streptozotocin  
*Robert J. Konrad, Kan Liu, and Jeffrey E. Kudlow* 92
- Anion-Induced Folding of Rabbit Muscle Pyruvate Kinase: Existence of Multiple Intermediate Conformations at Low pH  
*F. Edwin and M. V. Jagannadham* 99
- Interaction of Tetrahydrocrysene Ketone with Estrogen Receptors  $\alpha$  and  $\beta$  Indicates Conformational Differences in the Receptor Subtypes  
*Valentyn V. Tyulmenkov and Carolyn M. Klinge* 135

Number 2, September 15, 2000

### BIOLOGICAL OXIDATIONS: FREE RADICALS, NITRIC OXIDE, ANTIOXIDANTS, AND P450 REACTIONS

- Characterization of Cyp2d22, a Novel Cytochrome P450 Expressed in Mouse Mammary Cells  
*Niels Blume, James Leonard, Zhi Jin Xu, Osamu Watanabe, Helen Remotti, and Jack Fishman* 191
- New Evidence for the Multiplicity of Ubiquinone- and Inhibitor-Binding Sites in the Mitochondrial Complex I  
*José R. Tormo and Ernesto Estornell* 241
- Free-Radical-Induced Inactivation of Lysozyme and Carbonyl Residue Generation in Protein Are Not Necessarily Associated  
*Inés Jiménez, Eduardo A. Lissi, and Hernán Speisky* 247
- Effects of *trans*-Resveratrol on Copper-Dependent Hydroxyl-Radical Formation and DNA Damage: Evidence for Hydroxyl-Radical Scavenging and a Novel, Glutathione-Sparing Mechanism of Action  
*Mark J. Burkitt and James Duncan* 253

### BIOPHYSICAL CHEMISTRY AND X-RAY CRYSTALLOGRAPHY

- Functional Implications of the  $\beta$ -Helical Protein Fold: Differences in Chemical and Thermal Stabilities of *Erwinia chrysanthemi* EC16 Pectate Lyases B, C, and E  
*Jason C. Hurlbert and James F. Preston, III* 264



**DNA REPLICATION, RECOMBINATION, AND REPAIR; TRANSCRIPTION;  
MECHANISMS OF ONCOGENIC TRANSFORMATION**

- Regulation of the Porcine 1,25-Dihydroxyvitamin D<sub>3</sub>-24-Hydroxylase (CYP24) by 1,25-Dihydroxyvitamin D<sub>3</sub> and Parathyroid Hormone in AOK-B50 Cells *Claudia Zierold, Greg G. Reinholz, Jamie A. Mings, Jean M. Prahl, and Hector F. DeLuca* 323

**ENZYME STRUCTURE AND MECHANISMS; CELLULAR REGULATION;  
PHOSPHORYLATION AND DEPHOSPHORYLATION**

- Regulation of DNA Binding Activity of the Ligand-Activated Aryl Hydrocarbon Receptor by Tyrosine Phosphorylation *Sang-ki Park, Ellen C. Henry, and Thomas A. Gasiewicz* 302
- Redox Regulation of Yeast Flavin-Containing Monooxygenase *Jung-Keun Suh, Lawrence L. Poulsen, Daniel M. Ziegler, and Jon D. Robertus* 317
- Ethanol Enhances the Stimulatory Effects of Lysophosphatidic Acid on DNA Synthesis but Not Cell Proliferation in Human and Mouse Fibroblasts *Jin-Sheng Huang, Karan S. Crilly, and Zoltan Kiss* 328

**GLYCOCONJUGATES AND OLIGOSACCHARIDES;  
PROTEOGLYCANS AND EXTRACELLULAR MATRICES**

- Injurious Mechanical Compression of Bovine Articular Cartilage Induces Chondrocyte Apoptosis *Andreas M. Loening, Ian E. James, Marc E. Levenston, Alison M. Badger, Eliot H. Frank, Bodo Kurz, Mark E. Nuttall, Han-Hwa Hung, Simon M. Blake, Alan J. Grodzinsky, and Michael W. Lark* 205

**LIPIDS, LIPID MEDIATORS, AND GLYCOLIPIDS**

- Expression of Cholesterol 7 $\alpha$ -Hydroxylase Restores Bile Acid Synthesis in McArdle RH7777 Cells *Eric D. Labonté, Qianqian Li, and Luis B. Agellon* 273

**MEMBRANE PROTEINS AND TRANSPORT; INTRACELLULAR SIGNALS;  
CYTOKINES AND RECEPTORS**

- Isoaspartate Formation and Neurodegeneration in Alzheimer's Disease *Takahiko Shimizu, Atsushi Watanabe, Midori Ogawara, Hiroshi Mori, and Takuji Shirasawa* 225
- Stimulated Nonspecific Transport of Phospholipids Results in Elevated External Appearance of Phosphatidylserine in *ras*-Transformed Fibroblasts *Albena Momchilova, Lidia Ivanova, Tania Markovska, and Roumen Pankov* 295

**PLANT BIOCHEMISTRY AND MOLECULAR BIOLOGY**

- Molecular Cloning, Expression, and Characterization of Amorpha-4,11-diene Synthase, a Key Enzyme of Artemisinin Biosynthesis in *Artemisia annua* L. *Per Mercke, Marie Bengtsson, Harro J. Bouwmeester, Maarten A. Posthumus, and Peter E. Brodelius* 173
- Differential Induction of Sesquiterpene Metabolism in Tobacco Cell Suspension Cultures by Methyl Jasmonate and Fungal Elicitor *Alejandra Mandujano-Chávez, Mark A. Schoenbeck, Lyle F. Ralston, Edmundo Lozoya-Gloria, and Joseph Chappell* 285

**PROTEIN STRUCTURE AND FUNCTION; PROTEASES, PROTEIN TURNOVER,  
AND POST-TRANSLATIONAL PROCESSING**

- Structure of the Amino Terminus of a Gap Junction Protein *Priscilla E. M. Purnick, David C. Benjamin, Vytas K. Verselis, Thaddeus A. Bargiello, and Terry L. Dowd* 181
- Structural and Functional Characterization of Neuwiedase, a Nonhemorrhagic Fibrin(ogen)olytic Metalloprotease from *Bothrops neuwiedi* Snake Venom *Veridiana M. Rodrigues, Andreimar M. Soares, Renata Guerra-Sá, Vanderlei Rodrigues, Marcos R. M. Fontes, and José R. Giglio* 213



- Modification of Cysteine Residues by *N*-Ethylmaleimide Inhibits Annexin II Tetramer Mediated Liposome Aggregation  
*Taran K. Singh and Lin Liu* 23
- Thermodynamics of p53 Binding to hdm2(1-126): Effects of Phosphorylation and p53 Peptide Length  
*Zhihong Lai, Kurt R. Auger, Christine M. Manubay, and Robert A. Copeland* 27
- Novel Nonpeptidic Inhibitors of Peptide Deformylase  
*Maithri M. K. Jayasekera, Ann Kendall, Ramy Shammam, Michael Dermeyer, Matthew Tomala, Martin A. Shapiro, and Tod P. Holler* 33
- Author Index for Volume 381

#### NOTICE

The Subject Index for Volume 381 will appear in the December 15, 2000, issue as part of a cumulative index for the year 2000.